Amendments to the Claims:

This listing of claims replaces all prior versions, and listings, of claims in the application:

1. (CURRENTLY AMENDED) A data storage system for storing and retrieving data for a host processor, the data storage system comprising:

a plurality of different types of physical data storage devices, each physical data storage device having data storage attributes, the data storage attributes of the physical data storage devices differing from one another based on the types of the physical data storage devices; and

an outboard storage manager operable with the plurality of physical data storage devices for presenting to a host processor a virtual data storage image having a desired data storage attribute for a particular data storage application by combining different types of at least some of the physical data storage devices, based on the data storage attributes of the physical data storage devices, in an arrangement suitable for providing the desired data storage attribute such that the combined physical data storage device arrangement emulates the virtual data storage image, wherein each physical data storage device individually lacks the desired data storage attribute, the outboard storage manager includes interim storage, wherein the outboard storage manager stores in the interim storage data received from the host processor via the virtual data storage image and then transfers the data from the interim storage to the physical data storage devices of the combined physical data storage device arrangement, wherein the outboard storage manager stores in the interim storage data received from the physical data storage devices of the combined physical data storage device arrangement and then transfers the data from the interim storage to the host processor via the virtual data storage image.

2. (ORIGINAL) The data storage system of claim 1 wherein:
the virtual data storage image is a virtual data storage device image.

3. (ORIGINAL) The data storage system of claim 1 wherein:

the virtual data storage image is a virtual data storage file image.

4. (ORIGINAL) The data storage system of claim 1 wherein:
the virtual data storage image is a virtual data storage database image.

5. (ORIGINAL) The data storage system of claim 1 wherein:
the virtual data storage image presented by the outboard storage manager is a virtual disk component.

6. (ORIGINAL) The data storage system of claim 1 wherein:
the virtual data storage image presented by the outboard storage manger is a virtual tape component.

7. (ORIGINAL) The data storage system of claim 1 wherein:
the virtual data storage image presented by the outboard storage manager is a virtual library component.

8. (ORIGINAL) The data storage system of claim 1 wherein:
the virtual data storage image presented by the outboard storage manager is a virtual server component.

9. (ORIGINAL) The data storage system of claim 1 wherein:
the virtual data storage image presented by the outboard storage manager is a virtual database component.

10. (ORIGINAL) The data storage system of claim 1 wherein:
the virtual data storage image presented by the outboard storage manager is a virtual object component.

11. (PREVIOUSLY PRESENTED) The data storage system of claim 1 wherein:

the outboard storage manager combines the at least some of the physical data storage devices in the arrangement suitable for providing the desired data storage attribute as a function of attributes of the data for the particular data application.

12. (ORIGINAL) The data storage system of claim 1 further comprising:

a storage manager client resident on the host processor, wherein the storage manager client is operable with the outboard storage manager for transferring information indicative of the desired data storage attribute for the particular data application to the outboard storage manager.

13. (PREVIOUSLY PRESENTED) The data storage system of claim 11 further comprising:

a storage manager client resident on the host processor, wherein the storage manager client is operable with the outboard storage manager for transferring information indicative of the attributes of the data for the particular data application to the outboard storage manager.

14. (CANCELLED)

15. (PREVIOUSLY PRESENTED) The data storage system of claim 1 wherein:

the outboard storage manager includes a front end and a back end, the front end operable for presenting to the host processor the virtual data storage image having the desired data storage attribute for the particular data application, the back end operable for combining the at least some of the physical storage devices in the suitable arrangement, wherein the front end is connected by a data channel function and a control path function to the host processor for receiving the data and information indicative of the desired data storage attribute, wherein the back end is connected to each of the plurality of physical data storage devices by respective

data channels for transferring the received data to the physical data storage devices of the combined physical data storage device arrangement providing the desired data storage attribute.

16. (ORIGINAL) The data storage system of claim 15 wherein:

the data channel function and the control path function connect to the front end by using a single communication line.

17. (ORIGINAL) The data storage system of claim 15 wherein:

the data channel function and the control path function connect to the front end using respective communication lines.

18. (ORIGINAL) The data storage system of claim 1 wherein:

the plurality of physical data storage devices includes a disk subsystem.

19. (ORIGINAL) The data storage system of claim 1 wherein:

the plurality of physical data storage devices includes a tape subsystem.

20. (ORIGINAL) The data storage system of claim 1 wherein:

the plurality of physical data storage devices includes an optical subsystem.

21. (ORIGINAL) The data storage system of claim 1 wherein:

the plurality of physical data storage devices includes a solid state subsystem.

22. (ORIGINAL) The data storage system of claim 1 wherein:

the plurality of physical data storage devices includes a probe storage subsystem.

23. (PREVIOUSLY PRESENTED) The data storage system of claim 1 wherein:

the outboard storage manager arranges the physical data storage devices of the combined physical data storage device arrangement emulating the virtual data storage image

in a storage hierarchy having several storage levels without knowledge by the host processor for the particular data application.

24. (ORIGINAL) The data storage system of claim 23 wherein:

the outboard storage manager promotes and demotes storage levels in the storage hierarchy without knowledge by the host processor for the particular data application.

25. (ORIGINAL) The data storage system of claim 23 wherein:

the outboard storage manager removes and restores storage levels in the storage hierarchy without knowledge by the host processor for the particular data application.

26. (PREVIOUSLY PRESENTED) The data storage system of claim 23 wherein:

the outboard storage manager transfers the data from the host processor directly to intermediate storage levels via the virtual data storage image and the interim storage without knowledge by the host processor for the particular data application.

27. (PREVIOUSLY PRESENTED) The data storage system of claim 23 wherein:

the outboard storage manager transfers respective portions of the data from the host processor to respective storage levels via the virtual data storage image and the interim storage without knowledge by the host processor for the particular data application.

28. (PREVIOUSLY PRESENTED) The data storage system of claim 23 wherein:

the outboard storage manager transfers data simultaneously to different storage levels via the virtual data storage image and the interim storage without knowledge by the host processor for the particular data application.

29. (PREVIOUSLY PRESENTED) The data storage system of claim 23 wherein:

the outboard storage manager transfers data simultaneously from different storage levels to the virtual data storage image and the interim storage without knowledge by the host processor for the particular data application.

30. (ORIGINAL) The data storage system of claim 23 wherein:

the outboard storage manager arranges a physical data storage device in the combined physical data storage device arrangement in a storage hierarchy having several storage levels without knowledge by the host processor for the particular data application.

31. (ORIGINAL) The data storage system of claim 23 wherein:

the outboard storage manager arranges a portion of a physical data storage device in the combined physical data storage device arrangement in a storage hierarchy having several storage levels without knowledge by the host processor for the particular data application.

32. (CURRENTLY AMENDED) A data storage system for storing and retrieving data for a host processor, the data storage system comprising:

a plurality of different types of physical data storage devices including a disk subsystem and a tape subsystem, each physical data storage device having data storage attributes, the data storage attributes of the physical data storage devices differing from one another based on the types of the physical data storage devices; and

an outboard storage manager operable with the plurality of physical data storage devices for presenting to a host processor a virtual data storage image having a desired data storage attribute for a particular data storage application by organizing combining different types of at least some of the physical data storage devices, based on the data storage attributes of the physical data storage devices, in an arrangement suitable for providing the desired data storage attribute such that the combined physical data storage device arrangement emulates the virtual data storage image, wherein each physical data storage device individually lacks the

desired data storage attribute, the outboard storage manager includes interim storage, wherein the outboard storage manager stores in the interim storage data received from the host processor via the virtual data storage image and then transfers the data from the interim storage to the physical data storage devices of the combined physical data storage device arrangement, wherein the outboard storage manager stores in the interim storage data received from the physical data storage devices of the combined physical data storage device arrangement and then transfers the data from the interim storage to the host processor via the virtual data storage image.

33. (CURRENTLY AMENDED) A data storage method for storing and retrieving data for a host processor, the data storage method comprising:

providing a plurality of different types of physical data storage devices each having data storage attributes such that the data storage attributes differ from one another based on the types of the physical data storage devices;

presenting to a host processor a virtual data storage image having a desired data storage attribute for a particular data storage application by organizing different types of at least some of the physical data storage devices based on the data storage attributes of the physical data storage devices in an arrangement suitable for providing the desired data storage attribute such that the organized physical data storage device arrangement emulates the virtual data storage image, wherein each physical data storage device individually lacks the desired data storage attribute;

storing, in interim storage, data received from the host processor via the virtual data storage image and then transferring the data from the interim storage to the physical data storage devices of the organized physical data storage device arrangement; and

storing, in the interim storage, data received from the physical data storage devices of the organized physical data storage device arrangement and then transferring the data from the interim storage to the host processor via the virtual data storage image.

34. (PREVIOUSLY PRESENTED) The data storage method of claim 33 wherein:

organizing the at least some of the physical data storage devices in the organized physical data storage device arrangement includes organizing the at least some of the physical data storage devices as a function of attributes of the data for the particular data application.

35. (PREVIOUSLY PRESENTED) The data storage method of claim 33 wherein:

organizing the at least some of the physical data storage devices in the organized physical data storage device arrangement includes organizing the at least some of the physical data storage devices in a storage hierarchy having several storage levels without knowledge by the host processor for the particular data application.

36. (PREVIOUSLY PRESENTED) The data storage method of claim35 wherein:

organizing the at least some of the physical storage devices in the organized physical data storage device arrangement includes promoting and demoting storage levels in the storage hierarchy without knowledge by the host processor for the particular data application.

37. (PREVIOUSLY PRESENTED) The data storage method of claim 35 wherein:

organizing the at least some of the physical storage devices in the organized physical storage device arrangement includes removing and restoring storage levels in the storage hierarchy without knowledge by the host processor for the particular data application.

38. (PREVIOUSLY PRESENTED) The data storage method of claim 35 wherein:

transferring data received from the host processor includes transferring the data from the host processor directly to intermediate storage levels via the virtual data storage image and the interim storage without knowledge by the host processor for the particular data application.

39. (PREVIOUSLY PRESENTED) The data storage method of claim 35 wherein:

transferring data received from the host processor includes transferring respective portions of the data from the host processor to respective storage levels via the virtual data storage image and the interim storage without knowledge by the host processor for the particular data application.

40. (PREVIOUSLY PRESENTED) The data storage method of claim 35 wherein:

transferring data received from the host processor includes transferring the data simultaneously to different storage levels via the virtual data storage image and the interim storage without knowledge by the host processor for the particular data application.

41. (PREVIOUSLY PRESENTED) The data storage method of claim 35 wherein:

transferring data from the physical data storage device arrangement includes transferring the data simultaneously from different storage levels to the virtual data storage image and the interim storage without knowledge by the host processor for the particular data application.

42. (PREVIOUSLY PRESENTED) The data storage method of claim 33 wherein:

organizing the at least some of the physical data storage devices in the organized physical data storage arrangement includes arranging a physical data storage device in the organized physical data storage device arrangement in a storage hierarchy having several storage levels without knowledge by the host processor for the particular data application.

43. (CANCELLED)